

# Climate Management

Goal CM-1: Reduce greenhouse gas emission generated by municipal operations through increased energy efficiency and renewable energy generation.

## **Objectives:**

1. Support the City's climate management commitment as outlined in Resolution 2006-59, endorsement of the U.S. Mayors Climate Protection Agreement.
2. Facilitate increased energy efficiency of existing municipal facilities.
3. Increase understanding that internal energy efficiency efforts impact overall community sustainability.
4. Efficiently allocate public dollars and leverage incentives to develop a cost effective renewable energy program.
5. Increase the amount of renewable energy generated by the municipality.
6. Conserve natural resources and provide long-term economic benefit to the municipality through energy efficiency and renewable energy generation.
7. Protect the municipality from rising conventional energy costs.
8. Raise awareness among City staff on the importance of energy efficiency and responsible use of City resources.

## **Strategies and Actions:**

1. Incorporate recommendations to reduce greenhouse gas emissions as identified in the 2008 Greenhouse Gas Inventory and Management Plan.

*Responsible agencies: Sustainability Program*

2. Implement comprehensive operating and maintenance program for all municipal facilities.

*Responsible agencies: Facilities and Sustainability Program*

3. Develop preventative maintenance program with maintenance schedule and performance standards.

*Responsible agencies: Facilities and Sustainability Program*

4. Adopt desktop computer energy management system.

*Responsible agencies: IT Division and Sustainability Program*

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5. Replace inefficient holiday lights with LED efficient lights. Reduce hours holiday lights are in operation.

*Responsible agencies: Facilities, Parks Section and Sustainability Program*

6. Implement educational campaign to promote energy efficiency and responsible use of City resources. Campaign includes outreach through staff email, internal newsletter, staff meetings, new employee orientation and supervisor training.

*Responsible agencies: Sustainability Program and Sustainability Leadership Team*

7. Adhere to Sustainable Purchasing Policy standards that promote energy efficiency. Purchase only ENERGY STAR qualified appliances and equipment.

*Responsible agencies: All City Departments*

8. Research current efficiency technologies for improving the efficiency in water and waste water treatment systems.

*Responsible agencies: Utilities Department and Sustainability Program*

9. In partnership with ENERGY STAR, measure and track energy performance of City facilities.

*Responsible agencies: Sustainability Program, Facilities and facility representatives*

10. Identify small and large scale renewable energy opportunities for the City of Flagstaff.

*Responsible agencies: Sustainability Program and Facilities*

11. Identify all revenue streams, incentives and financial structures to be utilized by the City to fund renewable energy projects.

*Responsible agencies: Sustainability Program and Finance Department*

12. Review objectives, strategies and actions, metrics and targets as needed.

*Responsible agencies: Sustainability Program and Sustainability Leadership Team*

## **Measurement of Progress:**

Immediate-term goal – to occur within the current fiscal year

Short-term goal – to occur within two years

Mid-term goal – to occur within three to five years

Long-term goal – to occur within five to seven years

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Metric	Target	Immediate-term	Short-term	Mid-Term	Long-term
Greenhouse gas emissions generated by City operations.	Reduce greenhouse gas emissions generated by City operations.	Develop internal climate management educational campaigns. Monitor, evaluate and report annual City greenhouse gas emission generated.	Reduce greenhouse gas emissions by 7,000 tons CO <sub>2</sub> e from 2005 levels.	Reduce greenhouse gas emissions by 15,000 tons CO <sub>2</sub> e from 2005 levels.	Reduce greenhouse gas emissions by 35,000 tons CO <sub>2</sub> e from 2005 levels.
Municipal energy consumption.	Reduce overall municipal energy consumption by 5% a year until long term goal is met.	Complete ENERGY STAR database.	Install light switches in all City Hall offices. Install high efficiency toilets and water fixtures in all City owned facilities.	25% reduction in municipal energy consumption.	50% reduction in municipal energy consumption.
Occupied City facilities operating within ASHRAE standards.	Optimal performance of all occupied City facilities.	Conduct initial insulation repairs to all occupied City facilities.	Conduct performance audit of all City facilities not deemed for demolition. Conduct building envelope and ducting air-seal mitigation.	Install solar glazing and energy efficient windows in all occupied City facilities and repair existing HVAC systems in all occupied City facilities not deemed for demolition.	Improve the building envelope of all occupied City facilities.
Educate City staff on importance of energy conservation and responsible use of City resources.	Raise awareness among City staff.	Develop internal energy efficiency educational campaign. Encourage energy efficient behavior among City employees.	Implement energy efficiency campaign. Incorporate energy efficiency policy in new employee orientation.	Evaluate energy efficiency campaign.	
Municipal renewable energy production.	Increase renewable energy production.	Audit all City facilities and properties for renewable energy potential.	Pursue funding for renewable energy projects. Increase renewable energy production to 1 MW. Offset energy needs by incorporating renewable projects on all occupied city facilities to ensure generation of a minimum of 15% of the building's energy needs.	Increase renewable energy production to 3 MW.	Increase renewable energy production to 6 MW. Offset all City energy needs with renewable energy.

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Purchase of renewable energy	Increase the amount of energy purchased through renewable energy program.	Maintain existing commitment of 5% of electricity purchased through the APS Green Choice Program.	Increase APS Green Choice Program commitment to 10%.		
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## Definitions:

ASHRAE	ASHRAE writes standards for the purpose of establishing consensus for: 1) methods of test for use in commerce and 2) performance criteria for use as facilitators with which to guide the industry.
CO2e	Carbon dioxide equivalents are a common unit that allows greenhouse gas emissions of different global warming potential to be added together. CO2e reflects the global warming potential of each greenhouse gas relative to carbon dioxide, which has a global warming potential of 1.
Renewable Energy	Energy derived from sources that do not deplete natural resources. Examples include solar, wind, biomass and geothermal energy.